



# **8th International Conference on Fluvial Sedimentology**

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**Abstracts**

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## SEDIMENTARY EVOLUTION AND PROVENANCE OF THE LAST FLUVIAL EPISODES OF THE CAMEROS BASIN (LOWER CRETACEOUS, NORTH SPAIN)

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The Cameros Basin, in Central Spain in the Northwest of Iberian Chain, represents an intraplate rift basin that was filled up from Late Jurassic to Early Cretaceous times along NW-SE trending troughs.

The sedimentary fill was deposited predominantly in continental environments and comprises eight depositional sequences (DS). This study is focused on the Oliván Group (Late Aptian-Early Albian), which represents the last depositional sequence of the Cameros Basin, (DS8). This sequence is constituted by fluvial sandstones interbedded with thick silty-clay deposits. The Oliván Group (up to 1500 m thick) is restricted to the North area of the Cameros Basin and its top is eroded.

The sedimentary succession is constituted by meandering fluvial deposits in which five main facies associations are recognised: 1) Sandy channel fill deposits (mainly point bars), 2) flood plain deposits (silty-clay), 3) Crevasse-splays deposits (silty-sands), 4) Clay plug deposits, and 5) carbonate lacustrine deposits. The sequence starts with a predominance of the flood plain deposits that evolve upwards to a progressive increase of the channel fill deposits. This can be interpreted as an evolution of the fluvial system from distal areas to proximal areas where meandering channels developed.

The arenites of the Oliván Group consist of mature quartzofeldspathic petrofacies with an important content of metamorphic lithic fragments (mean Q75F15R10). Non-ondulatory monocrystalline quartz (Qmr) dominates over the other types of quartz, which implies a consistent maturity of the sandstones. It is also remarkable the presence of metamorphic lithic fragments (Lm). According to Garzanti & Vezzoli (2003), the main Lm grains are the Lsp\*, Lmp1\* and Lmp2\* types. The quartzofeldspathic character of the sandstone petrofacies can be related to the erosion of coarse crystalline rocks. These sources could be located in the Variscan Massif in the southwest margin of the basin. The high content in Qmr suggests an important maturation of the sediments during transport. The presence of Lsp grains implies recycling processes from underlying depositional sequences (i.e. Gr. Urbión). Humid climate conditions during sedimentation and recycling processes increased the mature character of these sediments. In addition, local low rank metamorphic supplies can be inferred due to the presence of Lmp1 and Lmp2 grains (rank 1 and 2 from Garzanti & Vezzoli, 2003; respectively). This study was supported by the Spanish DGICYT project BTE2001-026.

\* Lsp (Lithic fragments of lutites and/or fine grained sandstone); Lmp1 & Lmp2 (Different low rank metasedimentary lithic fragments).

### References:

Garzanti & Vezzoli, 2003. Jour. Of Sed. Research, 73; 830-837.